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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,133	01/23/2001	Ritsuko Nagao	SEL 236	3327

7590 03/31/2004

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EXAMINER

PHAM, THANH V

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/768,133

Applicant(s)

NAGAO ET AL.

Examiner

Thanh V Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12, 14, 16, J8, 20,22, 24,26,28 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14, 16, J8, 20,22, 24,26,28 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this instant case, the Chen reference does not used for the EL film but the films which are the same as claimed films for curing the rough topography in the process of applicant's admitted prior art. Therefore, the same advantages would be obtained.
2. The rejection under 35 U.S.C. 103(a) is maintained as stated in the previous Office Action mailed 11/19/03.

Response to Amendment

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in combination with Chen U.S. Patent No. 5,453,406.

The applicant's admitted prior art for the TFT formation to form a display device having pixel electrodes and an insulative layer over the pixel electrodes is similar to the instant invention, having use of an organic material where a low dielectric property is

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considered (the instant specification, page 2, second paragraph) but lacking the second leveling layer over the insulative layer (instant invention's specification page 7).

The Chen reference discloses a method for producing a planar surface (col. 2, lines 64-67) wherein the thickness of a first leveling film 40 (2,000-3,000 Angstroms, col. 6, lines 1-10) formed above a wiring 34 is thinner than that of a second leveling film 42 (4,000-6,000 Angstroms, col. 6, line 53-54) formed on the first leveling film. Both first and second leveling films are formed by spin coating and by the same material (col. 6, line 30). The method could be used to coat a display device (MPEP 2111.02).

In Chen's fig. 7, a second spin-on-glass layer 42 is formed over the first spin-on-glass layer 40 essentially planarizing the dielectric layer and completing the process. This second spin-on-glass layer 42 is formed by also using the liquid precursor of the siloxane type similar in composition to the material used for the first spin-on-glass layer 40, but in this second coating the spin-on-glass is dispensed at a significantly higher spin speed and at a constant speed. The same series of spin-on-glass is used for both layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of applicant's admitted prior art and the Chen's method and material with siloxane structure, to enable formation of the insulative layer of the applicant's admitted prior art process using the process of Chen and furthermore to achieve increased planarity over the formed TFT.

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Choice of thickness of the leveling layers would depend on many other factors such as the gap between the protruded elements or the height of the protruded element and would be obtained by routine experimentation, MPEP 2144.05.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the appropriate thickness such as the thickness in the ranges as claimed into the process of Chen as the thickness would be selected in accordance with the surface planarization art as taught by Chen.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh V. Pham whose telephone number is 571-272-1866. The examiner can normally be reached on M-T (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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TvP
03/29/04


George Fourson
Primary Examiner